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BRIEF CASES

3215
REV: JUNE 21, 2010

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Lyons Document Storage Corporation: Bond Accounting

In December 2008 Rene Cook sat in her cubicle trying to remember what she had learned in business school about bonds and bond accounting. Ms. Cook, a new MBA and special assistant in a training assignment with the company president, had just met with David Lyons, president of Lyons Document Storage Corporation. He had asked her to think about the possible consequences of repurchasing company bonds outstanding using cash that he felt could be obtained by issuing new bonds with a lower interest rate. Mr. Lyons had asked Rene to focus on how much the company's annual interest payments could be reduced, how reported earnings would be affected, and how the refunding would change the company's financial position as referenced on the balance sheet, if at all.

The Company

The Lyons Company was a family business in the stationary supply business until the document storage opportunity appeared in the early 1990s. Lyons Document Storage Corporation was incorporated in 1993 to compete in the emerging and rapidly growing industry that provides secure, off-site storage of documents for other corporate customers. The demand for storage was fueled by the need for corporations to retain records of sales contracts, employment records, compliance records, and other documents. The convenience of secure storage and easy recovery in professionally managed warehouses appealed to corporate clients that wanted to save space in their more expensive office buildings. At the same time, the stationary supply business was growing more competitive with the entrance of Staples, Office Depot, and Office Max.

The 1990s were difficult for Lyons because there were still differences among management about directions and the company's future. A large competitor, Iron Mountain, was expanding rapidly in the United States and internationally. When the decision to focus on document storage was made, it was imperative to move quickly to secure storage space and transportation equipment. Management decided to fund the company's growth by issuing debt rather than by issuing additional equity. Lyons had operated conservatively without any long-term debt until it issued bonds in 1999. The bonds issued were $10 million in 20-year bonds, offering a coupon rate of 8% with interest paid semiannually, and sold to yield the 9% market rate of interest at the time.

Professor William J. Bruns prepared this case solely as a basis for class discussion and not as an endorsement, a source of primary data, or an illustration of effective or ineffective management.

This case, though based on real events, is fictionalized, and any resemblance to actual persons or entities is coincidental. There are occasional references to actual companies in the narration.

Current Situation

David Lyons had told Rene Cook that he felt the time might be ripe to refund the 1999 bond issue and replace it with bonds bearing lower interest rates. He had talked with the company's investment bankers who had told him that $10 million in new 6% bonds with semiannual interest payments could be issued to provide the company with exactly $10 million, not considering underwriting costs and legal fees that were expected to be nominal. The bonds would pay $300,000 interest every January 2 and July 2 with a payment of $10 million in principal at the end of 10 years. The new interest payments would be $200,000 less each year than those due on the old bonds, which still had 12 years before they would be paid off. To Lyons, that seemed to offer a saving over the old bonds.

The existing bonds had been issued on July 2, 1999 and would be due July 2, 2019. Interest was paid semiannually to holders of the bonds.

Beginning her research, Rene reached for her copy of Lyons Document Storage's 2007 Annual Report. (See **Exhibit 1** for the Liabilities and Shareholders' Equity section of the 2007 Annual Report.) She was confused as to why the liability for the $10 million bonds was only $9.3 million at the end of 2007.

To clarify her understanding, Rene called the company's controller, Eric Petro, and learned that the 2000 bonds had been issued at a discount. Only about $9.1 million was received when the bonds were issued. For further information, Petro referred Rene to footnote 8 of the company's 2008 financial statements (**Exhibit 2**).

Next Rene went to the internet to determine the market price of the company's bonds. The current price was shown as $115.42—reflecting the 6% yield the market for bonds was currently supporting. This meant that each $1,000 bond would have to be repurchased for about $1,154. The company would have to spend $11.54 million to retire bonds that were listed on the balance sheet at $9.3 million. The $2.24 million loss would shrink the 2009 projected earnings and slow the growth rate in earnings about which David Lyons was so proud. Rene knew this would not make Mr. Lyons happy. However, the lower interest payments associated with the new bonds would help reduce cash outflows in future years.

Since it was getting late and the office was deserted, Rene cleared her desk and left the office for the week. During her bus ride home Rene wondered about her assignment. That evening she found and read again some notes that were among materials she had saved after business school (see **Exhibit 3)**. She had the weekend to think about her assignment. The recommendation she would make would have to be supported with a clear, straight-forward analysis of the situation that carefully weighed each of the variables that concerned David Lyons.

Student Assignment

1. Lyons Document Storage's controller, Eric Petro, told Rene that the bonds were issued in 1999 at a discount and that only approximately $9.1 million was received in cash. Explain what is meant by the terms "premium" or "discount" as they relate to bonds. Compute exactly how much the company received from its 8% bonds if the rate prevailing at the time of the original issue was 9% as indicated in **Exhibit 2**. Also, re-compute the amounts shown in the balance sheet at December 31, 2006, and December 31, 2007, for Long-Term Debt. What is the current market value of the bonds outstanding at the current effective interest rate of 6%?

2. If you were Rene Cook, would you recommend issuing $10 million, 6% bonds on January 2, 2009 and using the proceeds and other cash to refund the existing $10 million, 8% bonds? Will it cost

more, in terms of principal and interest payments, to keep the existing bonds or to issue new ones at a lower rate? Be prepared to discuss the impact of a bond refunding on the following areas:

- cash flows
- current year's earnings
- future years' earnings

Note: For purposes of your computations, assume that refunding, if selected, occurs effective January 2, 2009, at a price of $1,154.15 per bond. Ignore the effects of income taxes. How many new $1,000 bonds will Lyons have to issue to refund the old 9% bonds?

3. Assume 6% bonds could be issued and the proceeds used to refund the existing bonds. Compare the effects of these transactions with those calculated in Question 2. If you were Rene Cook, what amount of new bonds would you recommend and why?

Exhibit 1 Liabilities and Shareholders' Equity—December 31 ($ in thousands)

	2007	2006
Current Liabilities		
Accounts payable	$ 8,756	$ 8,598
Accrued expenses including interest	1,751	1,756
Income taxes payable	2,488	2,350
Total current liabilities	12,995	12,704
Long term debt (Note 8)	9,292	9,259
Total liabilities	$ 22,287	$ 21,963
Shareholders' Equity		
Common shares, $1 par value (5,000,000 authorized, 2,837,593 issued)	$2,838	$ 2,838
Additional paid-in capital	75,837	75,837
Treasury stock	-0-	-0-
Retained earnings	151,279	146,530
Total shareholders' equity	229,954	225,205
Total liabilities and shareholders' equity	$ 252,241	$ 247,168

Exhibit 2 Long-Term Debt Footnote

On July 2, 1999, the company issued $10 million, 8% bonds payable on July 2, 2019. Interest is payable semiannually on January 2 and July 2. The market rate of interest at the time for companies like ours was 9.00%. For financial reporting purposes, the discount on bonds payable is being amortized using the effective interest method over the life of the bonds. These bonds are presented in the balance sheet net of bond discount as follows (in thousands of dollars):

	2007	2006
Bonds payable	$10,000	$10,000
Less: Unamortized discount	708	741
Carrying value of bonds payable	$ 9,292	$ 9,259

Exhibit 3 Some Notes About Bonds That Rene Cook Found in Her Business School Files

Bonds

The amounts that business firms and other organizations wish to borrow are sometimes quite large—larger than any single lender may be willing or able to provide. For this reason, securities are created. One general category of borrowing instruments is that of bond indentures. The terms of a loan are specified in a master contract between the entity, which is the borrower, and the bondholders, who are the lenders. Each bondholder receives a certificate showing the total indebtedness represented by the certificate and the terms of his or her contract with the firm.

All bond agreements have three basic features:

1. The term of the loan is specified.
2. A face value of the loan is specified.
3. The repayment schedule is shown either in detailed amounts or as a percentage rate of interest to be paid at intervals based upon the face amount of the bond.

Bonds are typically issued in multiples of $1,000, so let us assume that an organization is offering to sell a bond with a term of 10 years, a face amount of $1,000, and semi-annual payments based on an interest rate of 8% annually. Now what do these contractual terms mean?

The face amount of the bond determines the amount that the issuers will pay the holder at the end of the life of the bond. In this example, at the end of 10 years, the issuer of the bond will pay to the bondholder $1,000. The "nominal" interest rate, 8%, determines the amount of annual payments that will be made in addition to the terminal payment at the end of the bond term. Since that rate in our example is 8%, the semi-annual payments on the $1,000 bond will be $40. For this reason, when the borrower firm offers this bond for sale, it is asking, "How much will you lend me for promises to pay $40 twice each year for 10 years and, in addition, for the promise that I will pay $1,000 at the end of 10 years?"[1]

The amount that a lender will be willing to offer for a bond is dependent upon the desired rate of interest, or yield, that the lender wishes to earn on the amount about to be invested. **Exhibit 3 A** illustrates the procedure that three investors might use to decide what to bid on a bond offering, assuming that each is willing to earn a different rate of interest on the investment. The lender willing to bid the highest amount determines the prevailing market interest rate for the bonds offered.

The difference between the face amount of the bond and the amount received by the borrower when the bond is initially issued is referred to as discount or premium. If the amount received is larger than the face amount, the difference is called premium. If it is smaller, the difference is called discount. Premium or discount results whenever the nominal interest rate, which is stated on the face of a bond, is different from the current market rate of interest demanded by lenders. Only after a bond is issued can the borrower determine the effective interest rate on the debt. The effective interest rate is the prevailing interest rate determined by the successful bid for the bonds.

The amount of the liability created by issuing a bond includes the premium (or excludes the discount), which will be amortized by the difference between the interest expense each period and the interest payment actually made. At any given time, the liability will be the face amount of the

[1] By convention, bond interest rates are quoted in annual terms, but one-half of the quoted interest rate is used to determine the amount of semiannual interest payments..

bond plus or minus the unamortized premium or discount created when the bond was first sold. From **Exhibit 3B**, we can surmise that Investor A, who is willing to invest to earn 6% interest, would at any time be willing to allow Eastern Coast Company to buy back the bond for the amount of liability at the beginning of the year, plus current interest not yet paid, plus perhaps a small premium for inconvenience. Near the end of the 10th year, the amount would be about $1,000 plus current interest earned but not paid.

A similar analysis could be applied to bond discounts, except that the positions would be somewhat different. We can see by referring to **Exhibit 3A** that if on the day after Eastern Coast had issued the bond to Investor C for $875, the company wished to cancel the agreement, Investor C probably would have been quite willing to accept $1,000 for it. On the other hand, if we assume that other investments offering a 10% interest rate are available and that Investor C would be able to reinvest at 10%, it would not be surprising to find that Investor C would be willing to cancel the future obligations in return for a payment for something near $875 plus any current interest already earned but not yet paid.

Exhibit 3A Analysis of a Bond by Three Investors (A, B, and C)
Eastern Coast Company—Analysis of Value of 10-Year, 8%, $1,000 Bonds to Three Investors Who Seek 6%, 8%, and 10% Return, Respectively

Investor A demands 6%.
Investor B demands 8%.
Investor C demands 10%.

Bond contract ("indenture") promises:
a) 20 payments of $40 every six months for 10 years.
b) 1 payment of $1,000 at end of 10 years.

Present Value of $1.00	**At 6% Interest**	**At 8% Interest**	**At 10% Interest**
Received semiannually for 10 years	14.8775	13.5903	12.4622
Received at end of 10 years	.5537	.4564	.3769

Value to Investors at Issue Date

A	**B**	**C**
14.8775 X $ 40 = $ 595.10	13.5903 X $ 40 = $ 543.60	12.4622 X $ 40 = $498.49
.5537 X 1,000 = 553.70	.4564 X 1,000 = 456.40	.3769 X 1,000 = 376.90
Total $1,148.80	Total $1,000.00	Total $875.39
A will pay a premium of $148.80 over the face amount of the bond.	B will pay the face amount of $1,000.	C demands a discount of $124.61 off the face amount of the bond.

Note: The value of the liability and hence the amount that the business firm issuing this bond will receive are dependent on the rate of return that the investors wish to earn on their investment. Because Investor A demands only 6% on his or her investment, he or she is willing to lend more, given the fixed terms of the contract. The entity issuing these bonds would be foolish not to accept his or her high bid of $1,148.80 for the bond.

Exhibit 3B Investment in a Bond from the Investor Point of View

Assume that the Eastern Coast Company issued the bond described in **Exhibit 3A** to Investor A and received $1,148.80 from him or her. Investor A has accepted a yield rate of interest of 6%, which is the rate of interest Eastern Coast now will pay on the *actual* amount borrowed. Its original promises remain constant, however; it will make 20 payments of $40 at the end of each year for 10 years and 1 payment of $1,000 at the end of 10 years. If the original liability of Eastern Coast is assumed to be equal to the amount received, the table below shows how that liability increases during each year because of the interest owed to Investor A, then falls as each $40 payment is made, until at the end of 10 years it is exactly equal to the $1,000 terminal payment originally promised.

Year	Liability at Beginning of Period	Interest at 3% = Yield Rate/ ½ Year	Liability at End of Period Before Payment	Payment	Liability at End of Period
.5	$1,148.80	$34.46	$1,183.26	$40.00	1,143.26
1	1,143.26	34.29	1.177.55	40.00	1,137.55
1.5	1,137.55	34.13	1,171.68	40.00	1,131.68
2	1,131.68	33.95	1,165.63	40.00	1,125.63
2.5	1,125.63	33.77	1,159.40	40.00	1,119.40
3	1,119.40	33.58	1.152.98	40.00	1,112.98
3.5	1,112.98	33.39	1,146.37	40.00	1,106.37
4	1,106.37	33.19	1,139.56	40.00	1,099.56
4.5	1,099.56	32.99	1.132.55	40.00	1,092.55
5	1,092.55	32.78	1,125.33	40.00	1,085.33
5.5	1,085.33	32.56	1,117.89	40.00	1,077.89
6	1,077.89	32.33	1,110.22	40.00	1,070.22
6.5	1,070.22	32.11	1,102.33	40.00	1,062.33
7	1,062.33	31.87	1,094.20	40.00	1,054.20
7.5	1,054.20	31.62	1,085.82	40.00	1,045.82
8	1,045.82	31.38	1,077.20	40.00	1,037.20
8.5	1,037.20	31.12	1,068.32	40.00	1,028.32
9	1,028.32	30.84	1,059.16	40.00	1,019.16
9.5	1,019.16	30.58	1,049.74	40.00	1,009.74
10	1,009.74	30.26	1,040.00	40.00	1,000.00
10	1,000.00	--	1,000.00	1,000.00	0.00
Total		651.20		1,800.00	

Total borrowed	$1,148.80
Interest	651.20
	$1,800.00